MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS, HAER No. CA-2272-D
MILL CREEK 2 LOWER FLOWLINE
Mill Creek
Yucaipa vicinity
San Bernardino County
California

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of Interior
1111 Jackson Street
Oakland, California 94607

HISTORIC AMERICAN ENGINEERING RECORD

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MILL CREEK 2 LOWER FLOWLINE

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Location: The Lower Flowline for the Mill Creek 2 Hydroelectric System (MC 2) is located along the south side of Mill Creek and extends along a southwesterly direction towards the Mill Creek 2 Forebay. The Lower Flowline is located in San Bernardino County, California. (USGS topographic map Yucaipa, Sections 7, 8 and 13; T. 1S., R. 1W.).

Significance: The Lower Flowline is a contributing feature to the Mill Creek Hydroelectric System Historic District. The Lower Flowline carries the water from the MC 2 intakes to the forebay. MC 2 is one of the earliest examples of a high-head hydroelectric system within the United States and one of the first commercial three-phase alternating current stations in California. Three-phase alternating later became the industry standard.

Description: The Lower Flowline transports the water from MC 2 to the forebay. Originally, the Lower Flowline consisted of 11,334.2 feet of concrete laid in a covered trench, 1,692.7 feet of concrete pipe laid through tunnels, 1,971.1 feet of wooden flume and 226.5 feet of open ditch.[57] There were 22 wooden flumes, ranging in length from 22 to 400 feet, with an approximate 16 foot span.[58] The flume box was made of redwood and placed longitudinally to the water flow. Flumes in exposed areas were protected against landslides and other damage with wood planks. Additional flumes were situated below the sandbox. The Lower Flowline continued across the Cottage Canyon natural spillway. No wood flumes remain today. The concrete pipes were made using the gravel and sand taken from the Mill Creek wash, and Portland cement, made at a plant in Colton, California. The pipes are located two to three feet underground, and were maintained using manholes located at 500 feet intervals. These manholes still exist. Sections of this system were later replaced with aboveground steel pipes and squared concrete ditches with wood planks.[59]

History: The Lower Flowline was constructed as part of the Mill Creek 2 Hydroelectric System. The MC 2 system was constructed between 1889 and 1899 by the Redlands Electric Light and Power Company, later absorbed by Edison Electric Company of Los Angeles in 1901. MC 2 has not been in operation since 1992, when it was damaged in a flood. Today MC 2 is owned by Southern California Edison. Please see the Historic Context section in the general Historic American Engineering Record for the Mill Creek 2 and 3 Hydroelectric Systems (HAER No. CA-2272) for additional information.

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Sources:

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[57] Frederick Hall Fowler, *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*, Washington, D. C.: Government Printing Office, 1923, 603.

[58] George P. Low, "The Generating, Transmission and Distribution Systems of The Edison Electric Company of Los Angeles, Cal.," *The Journal of Electricity, Power and Gas*, vol. XIII, no. 1, January, 1903, 22.

[59] Philip de Barros and Carmen Weber, "Cultural Resources Inventory and Evaluation of the Mill Creek Hydroelectric Project FERC Project No 1934," March 1993, 4-5.

Fowler, Frederick Hall. *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*. Washington, D.C.: Government Printing Office, 1923.

White, David R. M. "Cultural Resource Management Plan for the Southern California Edison Company Mill Creek Hydroelectric Project (FERC Project No. 1934) San Bernardino County, California," June 1993.

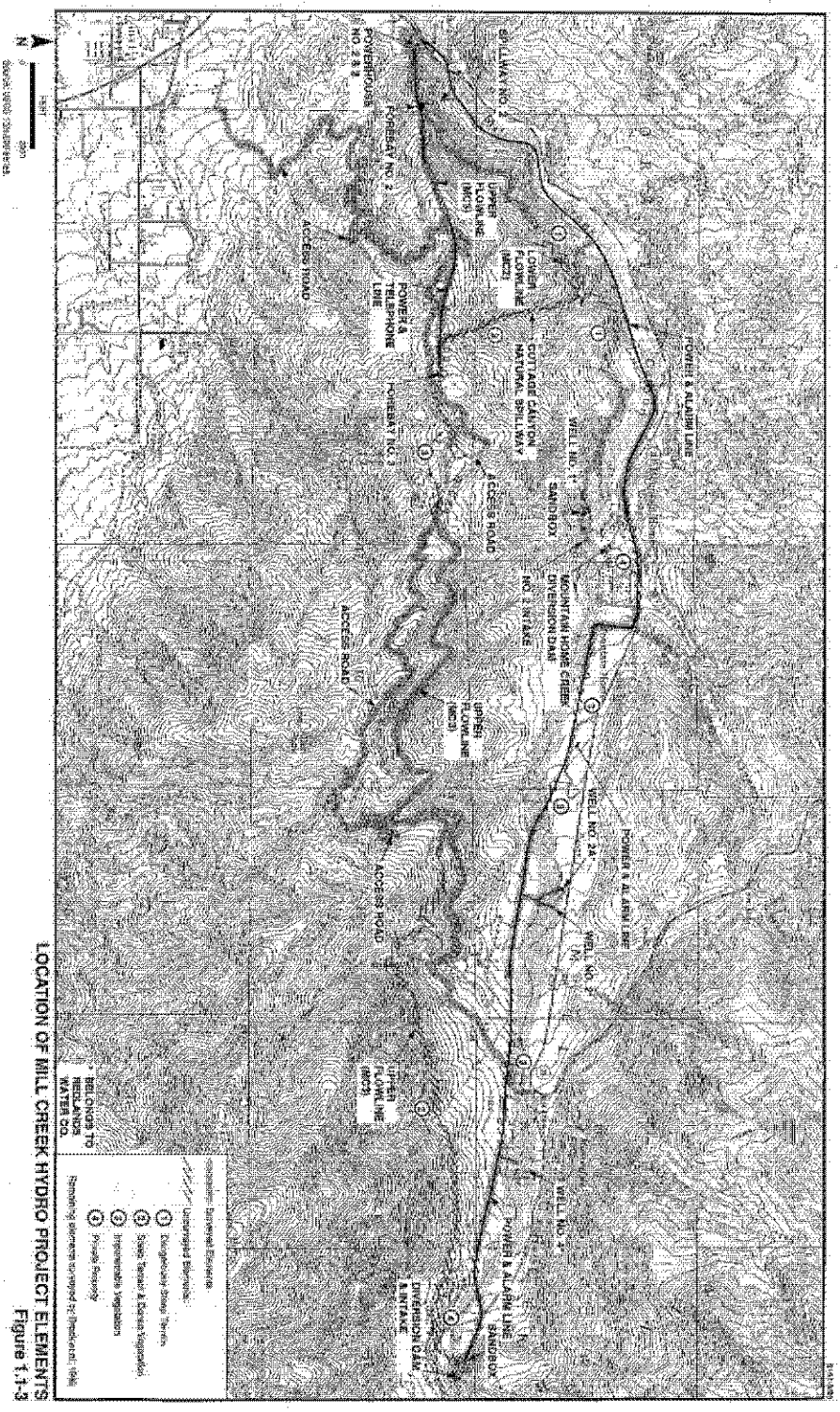
Low, George P. "The Generating, Transmission and Distribution Systems of The Edison Electric Company of Los Angeles, Cal.," *The Journal of Electricity, Power and Gas*. vol. XIII, no. 1. January, 1903.

"Means Much to Redlands: Big Light and Power Deal Closed," *Los Angeles Times*. May 25, 1901, 8.

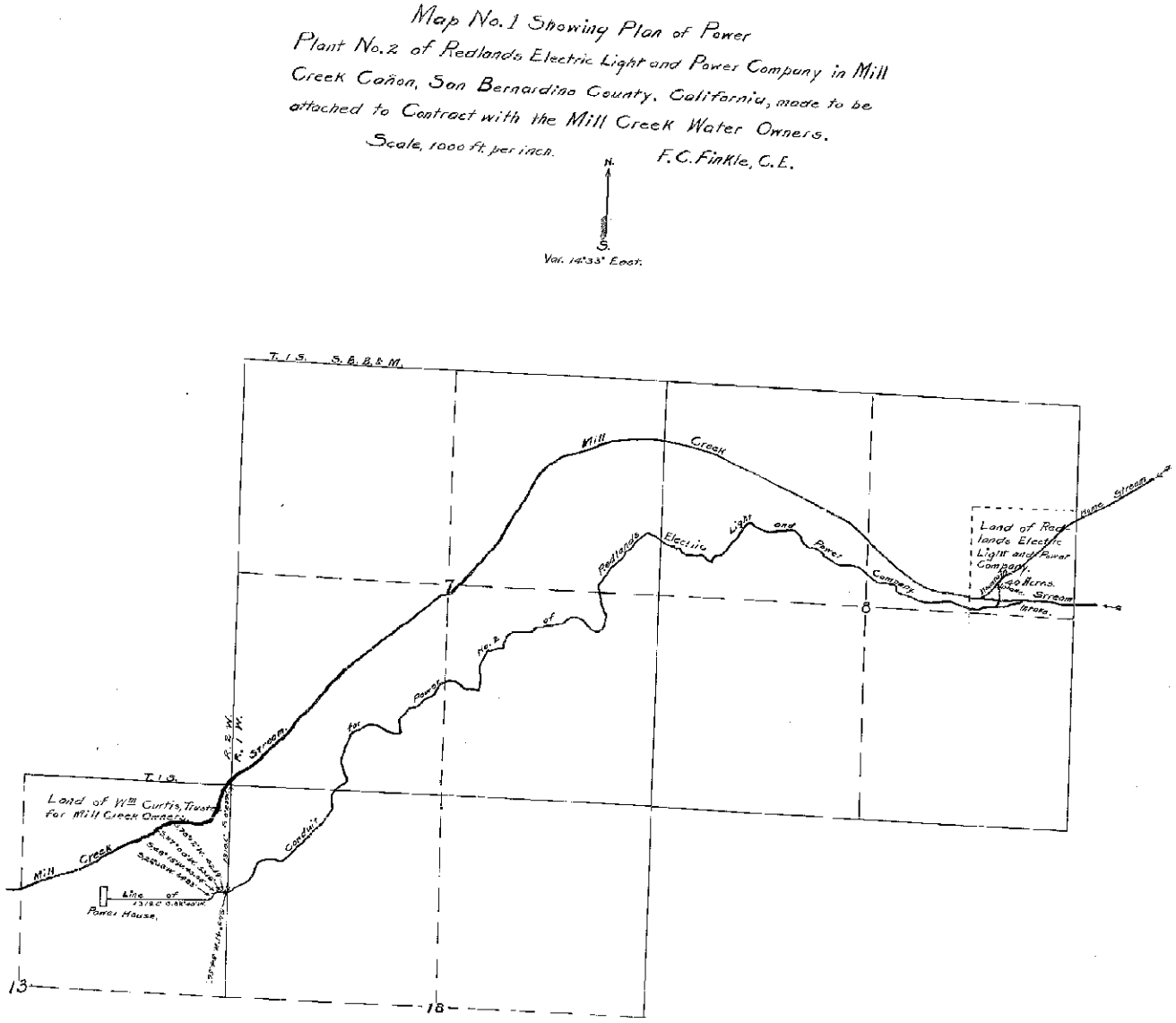
"Redlands Electric Light & Power Co., Edition Electric Co. of Los Angeles, Mill Creek Powerhouses," *National Register of Historic Places Inventory – Nomination Form*, April 30, 1985, item number 7, 10.

Historian: Christeen Taniguchi, Senior Architectural Historian, and Nicole Collum, Architectural Historian II, Galvin Preservation Associates, 1611 S. Pacific Coast Highway, #104, Redondo Beach, CA 90277, 2008-2009.

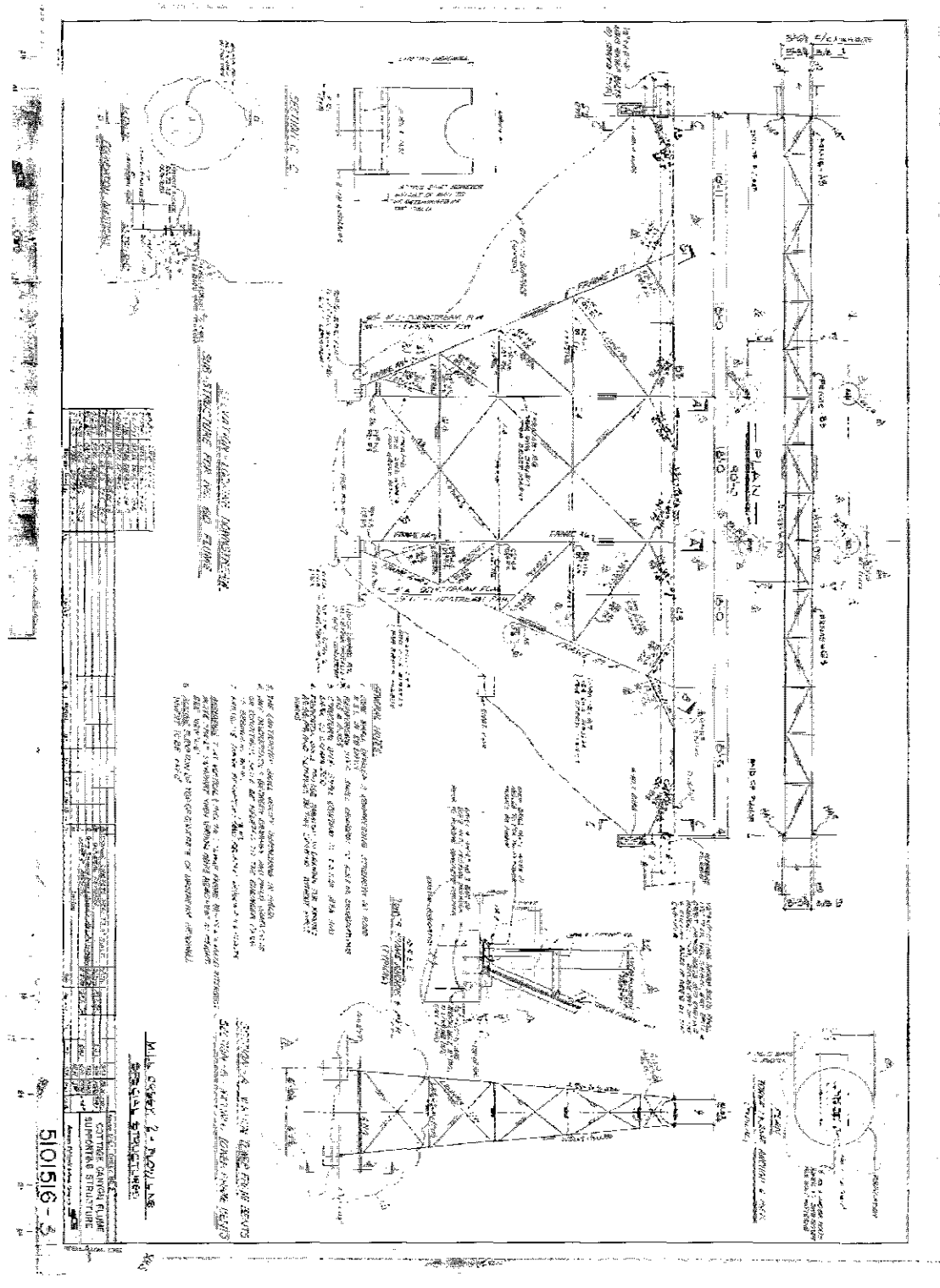
Project Information: MC 2 has not operated since 1992 when it was damaged during floods. It was not, however, decommissioned. The Southern California Edison Company, in conjunction with the San Bernardino National Forest, the agency that owns the property, proposes to formally decommission the facility. This process will include filling the sandbox and forebay with slurry, and removing the metal features. Although MC 3 is still in operation, it is also being recorded as part of this project because of the system's close association with MC 2.



Location of Mill Creek Hydro Project Elements. (Map Courtesy of Southern California Edison)



Mill Creek 2 Project Plan. MC 2 Lower Flowline is identified as the conduit in this plan. (Plan Courtesy of Southern California Edison)



Mill Creek 2 Flowline and related structures. (Drawing courtesy of Southern California Edison)